

## Assignment – 4 The Human Factor

Q1. In this chapter, we discussed redundancy in languages. Sometimes, there are so many letters in a word that using only a small subset of these letters is sufficient to guess what that word means.

- A. Do you think we should follow our example in the lecture regarding a 13-year-old student's essay and remove letters from our languages? Why/why not? Explain in an educated fashion.

→ Removing letters from the language is a new trend being observed among today's generation or say in Gen-Z and Alpha Generation. For them, it seems very much cool to remove letters from the language which ultimately forms a new language or creation of more slangs that are more understandable and are easy to use. YES, I believe that using small subset of words or removing letters from our language is a good idea that has many advantages that outweighs disadvantages, and we should definitely follow this trend. Firstly, this trend benefits in terms of typing skills for those who interact with an electronic device. By removing letters from the words or by forming the shortcuts of the words results in good typing speed and can help us to chat in more efficient and more understandable way. Even this helps in sending and receiving messages more quickly. For an example, the sentence 'Where are you?' Became 'Where r u' is having the same meaning but the second one looks easier to understand what the person is trying to say and also it saves our time to type the message that has the same meaning. Also, this looks more cool and is more readable as compared to the traditional one. It has also been observed that this new trend or Gen Z trend or shortening the sentence is often preferred in today's era. It also reduces the length of the entire sentence without changing the meaning of the given sentence. Moreover, for those who are new to this trend can learn this so called new language easily as they just need to write what they are speaking by mesmerizing tone of themselves by comparing it with the English alphabets, for instance, using 'r' instead of 'are', using 'u' instead of 'you' 'Y' instead of 'Why'. Additionally, a single short word or letter can be used for multi purposes based on the occasion or the situation. For an example, people are using 'Y' for 'YES' and also 'Y' for 'WHY', 'M' instead of 'Male' and 'M' for 'I am'. So, it depends upon the context where they are using but they can use the same short words for multi-purposes. To conclude, YES, I believe this is good idea as this ensures more clarity in understanding words and adds flexibility in different different contexts though having few drawbacks but can be ignored as using shortened language is not affecting the meaning of the actual sentence.

B. Do you think removing these letters would also work in languages other than English? Why/why not? Explain.

→ Well, I believe as English is the universal language, can be modernized by removing letters from the word whereby removing the same in any languages other than English will change the meaning of it and will also create difficulties in understanding its meaning until and unless silent letters are removed and so I believe that NO it will not work in removing these letters in languages other than English. I have seen in bus services having few words in other languages. For an example, "Próxima Parada" which is Spanish word having meant Next Stop or station. In languages other than English has few accent marks indicating more stress on the given letter and without using such accent marks which pronounced completely different. So, this would confuse pronunciation that will affect to the conversation. For instance though proxima and próxima are the same thing but removing the accent will create confusion and could lead to different different meanings of it. To understand more precisely, El vs. ÉL: Here EL means 'THE' while ÉL means 'HE' and so by removing such accent will create ambiguity. Each letter in any words is contributing to its pronunciation and meaning and removing any words will alter its significant meaning. This shows that, even in a relatively simple phrase like próxima parada, redundant letters like accents or gendered endings are more essential for maintaining clarity, grammatical correctness, and meaning in the language. Here, if a person tries to guess the rest of the words or the phrase, there are more chances of getting incorrect answer as it may change the entire context of the sentence. Hence, I believe removing these letters would not work in languages other than English.

Q2. Go to <https://www.typingpal.com/en/typing-test> website and complete a typing test thrice. Record your results. How would you be able to improve your writing? Do you think the score was affected by the keyboard you used? Explain.

→ Attempt 1: Though I prefer to type without looking to the keyboard, in my very first attempt, I was a bit nervous and was looking back and forth on keyboard and on screen to avoid mistakes which resulted into decrease in my own speed. I observed the pattern that if I will attempt correct words than the cursor will move ahead and will show green color whereby attempting mistake won't allow me to go ahead. In other platform, the cursor was moving ahead by highlighting the wrong letter into red and if we need to correct the word we can go back and correct it but, in this platform, I was not able to move ahead which is a bit awkward for me as this resulted into less speed and more mistakes.

→ Attempt 2: Now as I was aware about the pattern of correct and wrong word and having a good grip on the keyboard, I make sure to give best attempt without looking to the keyboard and this time my typing speed was 10wpm more than my previous which increased my confidence and this time only silly mistakes were there. I have noticed that I can improve my typing speed if I will take pauses only when I end the sentence instead of taking pauses after completing every words having fear of falling trap into punctuations as I believe this are my weak points that reduces my speed and having more mistakes.

→ Attempt 3 : This time I was also aware about the sentence and I was knowing the points where I had made the mistakes but still I fall into 4 mistakes but this were not the same, this time being overconfident of increasing my speed, I typed whole word starting the first letter small instead of capital which resulted into 4 mistakes at a single letter as the cursor was not moving ahead because of the error of capitalizing the letter.

(Observation: In all of this attempts I think keyboard, reflexes matters a lot but there is one more factor that affects the typing speed and is body posture. In all of this attempts, I was sitting on floor instead of sitting on table and chair. I believe this also affected my score. The second factor by which I can improve my performance is through practicing 1-2 times before starting the actual test. In second and third attempt my score improved by almost 10wpm just because in my first attempt, I was not having proper grip but as soon as my all fingers adjusted on the keys, and having good reflexes being aware about the error points, I had improved my score and by this way I can improve my score. Also, I liked the sound feature as every time when I was attempting an error, there was a sound which diverts mind sending reflexes to stop to type next word as we encountered an error and because of this feature I don't need to lookout to the keyword and I can identify easily that where I had done mistake) No, I believe my score wasn't affected as this is the same typing speed which I do have every time I use my current keyboard as I am use to it with my current keyboard and I do have grip on this keyboard. But if I try to attempt same test on different keyboards or new keyboards than it will definitely affect to my result as each and every keyboards keys are made from different materials and might have good and bad feels if I do comparisons with different different devices. Personally, I love mechanical keyboards being a gamer and so non mechanical keyboards are bit awkward for me to use it that might will affect the score and accuracy.

Q3. Lastly, go to the website <https://humanbenchmark.com/> and experiment with the different games you have there. For each run, save your results. Discuss the outcomes. From the context of HCI, do you think your results could be improved somehow? How? Explain. \*

**REACTION TIME:** This reaction time game is all about knowing how quickly a player can respond. While playing this game, it tests the reflection power of ours by clicking screen when it turns to green. It was very quick that a most of the humans might fail to reflect in 100ms. I personally tried this multiple times and even I clicked before the screen turns to green else rest of the time, I recorded my reflection time which was not same all the time. I believe that those people's score is near to 150ms can be considered as having far better reflect sense as compared to others. This also tests the thinking power when to click or react when the screen reflects or changes to green. From the context of HCI, I believe my score can be improved if I use touchscreen devices which would be better instead of using mouse or keyboards.

**SEQUENCE MEMORY:** This game is all about remembering the patterns of the sequence boxes. This shows about the accuracy of the players. In this game, I tried to remember the pattern of the sequence and it helps in testing and improving memory as the difficulty increases as the level increases gradually. One feature I liked the most is about sound as each box was having different sound and while forming patterns I felt like I was making any tune or song. This game also helps in improving the focus and helps me to stay calm and make memory stronger. From HCI Perspective, I believe it would be same with irrespective of devices as it is all about memory and the difficulty level.

**AIM TRAINER:** This game is all about how fast a player can hit 30 targets as soon as possible. While playing this game in laptop that too without mouse was very difficult for me to hit the target as it consumed more time to reach to the target. I think this game depends on cursor control. A player having dpi mouse will have an advantage as compared to others. From HCI perspective, players who are using laptop will have disadvantage as compared to those who are using external mouse. I believe my score will be improved if I will use mouse having high DPI or if I change internal mouse movement.

**NUMBER MEMORY:** This game is all about remembering numbers. From level 1, there is single digit but as a player reaches to higher level, the number increases and the time reduces to remember the numbers on screen. I reached to level 11 and just because of failing last 2 digit I lost round. It became more difficult when a player crosses level 10 and the average level which players hit is 7. And as per my result I can say that I am good at remembering numbers. From HCI perspective if more than one chance is given to a player if they fail to hit the correct digit in between then they might reach to more levels as for now if anyone hits a single wrong digit then they lose the game. So, by this way, score can be improved. The score can also be improved if the digit repeats in between.

**VERBAL MEMORY:** This game tests if we encountered the similar words in past or not or like recalling the words. Here players see collection of words and need to determine if the word is new or not. From the HCI perspective, the score can be improved if a player

gets more lives or like an more attempts if they hit wrong words by any mistakes. Practicing similar tests and regularly word recalling over time will improve score.

**CHIMP TEST** This game test the short term memory of a player as we saw in the lecture how a player is good in remembering the sequence in short time. From the HCI perspective, A clear interface helps maintain focus. And also practice will improve the performance. I believe the score can be improved if the numbers are displayed for a bit long time.

**VISUAL MEMORY** This game test the location of the highlighted colored boxes and If a players fail to do so will lose the game. This also test the memory and improve the memory power. This scored can be improved if more lives are given incase the players fail to select the correct object.

**TYPING** This game test the typing speed of a player who good they are in typing words. Good feature is that I can go back if I hit wrong words which will show red and than it is all about how good I am at typing the words. As per the HCI perspective, I believe this score will be removed if I will use mechanical keyboards as I being gamer have good grip on mechanical keyboards rather than non mechanical keyboards.

Q4.

Machine learning is a branch of AI that enables systems to learn from data, identify patterns, and make decisions with minimal human intervention. It is used for tasks like classification, prediction, and creating new content, with common types including supervised, unsupervised, and reinforcement learning. Machine learning powers many applications, such as recommendation engines, fraud detection, and self-driving cars.

This video explains what machine learning is in 100 seconds:

### **Types of machine learning**

- **Supervised learning:**

Uses labeled datasets, where the correct output is already known, to train a model for tasks like classification and regression.

- **Unsupervised learning:**

Works with unlabeled data to find hidden patterns and structures, such as grouping similar data points (clustering).

- **Reinforcement learning:**

An agent learns through trial and error in an interactive environment, receiving rewards or penalties to guide its behavior toward a goal.

- **Generative AI:**

Creates new content, like text or images, by learning the patterns of existing data and then mimicking them.

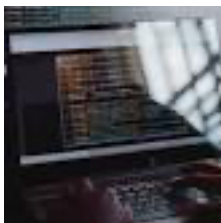
### Applications

- **Recommendation systems:** Suggesting movies, songs, or products based on user behavior.
- **Fraud detection:** Identifying fraudulent transactions in financial systems.
- **Image and speech recognition:** Identifying objects in images or transcribing spoken words.
- **Autonomous vehicles:** Enabling cars to navigate and make decisions on the road.
- **Healthcare:** Assisting with medical diagnosis and personalizing medicine.
- Machine Learning: What it is and why it matters | SAS

Machine learning is a method of data analysis that automates analytical model building. It is a branch of artificial intelligence ...



SAS: Data and AI Solutions



- What Is Machine Learning? - MATLAB & Simulink - MathWorks

More Data, More Questions, Better Answers. Machine learning algorithms find natural patterns in data that generate insight and hel...



MathWorks



- What is Machine Learning? - ML Technology Explained - AWS

Supervised machine learning Data scientists supply algorithms with labeled and defined training data to assess for correlations. T...



Amazon Web Services (AWS)

- Show all